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In the Beginning -- We [Design for] Humans, an Opening Studio Curriculum for an Architectural Professional Program

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motto: "Psychological reflection is a "constation" [a finding]. Its task is to discover the meaning of behavior through an effective contact with my own behavior and that of others. Phenomenological psychology is therefore a search for essence, or meaning, but not apart from facts. Finally this essence is accessible only in and through the individual situation in which it appears." M. Merleau-Ponty, The Primacy of Perception, 1964.

Preamble:

Two years ago, after long deliberations, the Architectural Program at the University of Nebraska-Lincoln formally adopted a significant programmatic change: it restructured its curriculum from a 4+2 curriculum to a 2+4 curriculum. In the same time the status of the program was redefined as a 'professional' program similar to other professional programs, such as Law and Medicine. These changes enable the program to adopt a more autonomous position in the University. As part of the restructuring process a number of essential changes were introduced, two with a significant impact on our current discussion: [a] the two first years were incorporated as a joint pre-architecture subprogram between architecture and interior design. The design component of this subprogram focuses on visual literacy and basic design. [b] Each design studio of the third and fourth year received a topical focus whose theoretical aspects became the subject matter of an adjunct course, attached to each design studios.[1] In this context, the fall semester studio of the third year became the opening design studio of the architectural professional program. Its assigned topic is the human dimension and its programmatic representation.

The studio's objectives and scope:

The introduction and discussion of the human program as a design topic is as vast as it is complex. In order to prevent confusion and vagaries a set of pedagogical objectives and criteria were added to the syllabus of the studio instructed by the author. The intention was to encourage each individual to develop his/her own opinion and design direction. As a consequence of this approach, the studio encourages students to recognize that solutions are not absolute, are conditioned by the designers' interpretation of reality, reflect human diversity and are influenced by contextual events and time.[2] In order to address this theoretical premise students are expected to experiment with new ideas and research continuously available information, considered as key sources for creative inspiration. This process also helps students understand that, due to the inexhaustible amount of produced information, academic studies cannot concentrate anymore on the transfer of knowledge, but must give priority to the development of the individuals' ability to analyze and criticize data and to discover, understand and create knowledge by themselves. These objectives are met by involving the students in a cyclical process that combines intuitive creativity, open debate, self-criticism with descriptive and normative analysis of information and findings.[3]

In this pedagogical context the achievement of a beginning understanding of architectural form attributes, as shaped by the intellectual diversity of the human program and its relation to use, site, structure, space and place, becomes the key objective of the studio. In order to address this complex objective students are encouraged to approach Architecture as a hermeneutic integration of idea, object and event.[4] As part of this discussion, the students investigate the role and merit of their own ideas as reflections on the human program and their impact on architectural form. The discussion is further expanded to question the ways events affect architectural form and how are events being affected by architecture. A significant aspect of this process is to generate a frank and direct intellectual exposure through active participation and cooperation between students. As part of this exposure students are expected to explain, through personal experimentation and theoretical evidence, their findings and designed results.

An additional objective is to take full advantage of the design enrichment received in the pre-architecture program. As such the intent is to build on the students' acquired skill to visually represent abstract ideas using traditional and electronic media. This skill is used as an exploration vehicle facilitating the understanding of the architectural implication of human dimensions and other architectural form determining factors.

The fulfillment of the listed goals and objectives may indicate a rather open academic scope, which would contradict this studio's specific position in the program's studio sequence. In order to limit and define better the learning paradigm of this studio a number of design and teaching criteria were adopted. For this purpose, emphasis is placed on the achievement of: [a] clear and accurate design intent; and [b] a constant search for a 'good fit' between the components of the design. An idea that clearly explains the topic and sets clear priorities, legibly represented, can provide the student a basis of reference: the design intent. Ultimately this clarification can become

the students' main contribution to his intellectual development. Established design intent can provide the student with a major leap into the exhausting process of analysis and interpretation of the human program. From here on, the search for a 'good fit' between the student's design intent and reality and between proposals and their verification remains a life-long challenge and constantly reinvigorating adventure.[5]

In evaluating their design students were required to address a predefined criterion related to the economy of form. From assignment to assignment this criterion changes and may vary, for instance, between "minimum resources for optimum results" and "optimum resources for maximum results". An implied criterion, related to the economy of form, is addressed by the time allocation for each assignment. The rather demanding work scheduling becomes a significant factor in the design process due to the rather rapid succession of assignments. Students must make decisions on what to focus on and how much to detail in order to communicate their architectural intent.

A brief description and discussion of the work process and work format.

Initially the studio was structured to include seven assignments divided into four design topics. Administrative difficulties eliminated the last topic: the design and execution of the comprehensive studio exhibition. Therefore the actual framework this fall included five assignments covering three topics. The fall semester extends over fourteen weeks, with three afternoons every week dedicated to contact time in the design studio. The reported Fall 2001 studio enrolled thirteen students.

The first topic and assignment - "The animation of the Lied Center", [Fig.1-3] - addressed two specific objectives: to establish an initial transition from basic design to beginning architectural design; and to indicate the individual abilities and personalities of the students. The assignment was an individual design task whose focus was the enrichment of a large performance center. The building, designed in a bare brutalistic style, occupies a strategic location marking one of the two major entries between the University City Campus and Lincoln's Downtown. The assignment required the preservation of the Center's current pattern of operations, while attempting to make the external envelope of the building more responsive to its urban context and the public. The economy of form design criterion was "minimum resources for optimum results". Another significant limitation of the assignment was its short time allocation: one week. Students had to rapidly overcome their hesitations, make design decisions and generate results. This rather compelling process enabled, even the more hesitant students to take risks and, in the process, discover that they have the basic knowledge and inherent intuition to create and represent their ideas. Some students applied their previous basic design experience in order to generate their first exploration toward a design result. Others, attempted to address 'pure architectural' questions such as the suitability of the building's style and the historic context. These explorations generated a variety of approaches: from highly formal and elaborated style-based proposals, to attempts to conduct inquiries into the intrinsic morphology of the given artifact and reflections on the discovered attributes of architectural form.

The assignment established a work pace and intensity that was sustained throughout the whole semester. In addition it enabled the students to become acquainted, in academic terms, with each other, a knowledge that helped them select their team partners for the next assignment.

The second design topic was focused on physical human dimensions and the spatial ergonomic understanding of human activities. The topic included two assignments: a research assignment and an application assignment.

The research assignment, entitled 'Meeting Jo and Josephine', [Fig.3-6] was inspired by an essay written by Henri Dreyfuss [1955]. The students had the option to develop the sub-topics as individual studies or in couples. The time span allocated to this assignment was one week. Each team was assigned a separate common activity such as sleeping, hygiene or food preparation. The focus of the study was the activity itself as performed by the students themselves, not the utilities or the existing surrounding built environment. The students selected the topics and convenient locations. The intention of the research was to identify and document, as accurate as possible, the activity process and record it through direct observations. The time span of the observation was limited to twenty-four hours. The research documentation was requested in two formats: drafted profiles of significant positions, for each activity documented through a plan and two sections in 1/4" scale; and three dimensional compilations of all the profiles represented in drawings and a 3D hard model: the bubble. The study was intended to bring students to the awareness that human activity determines an optimal activity space. Yet the resulting shape, apparently accidental, can be recorded with accuracy. These findings also show that the recorded observations and dimensions, accurate as they may be in reference to each activity of the individual subject, cannot provide a precise spatial result able to accommodate an individual for 24 hours. Human behavior includes many variables, improvisations and interpretations that constantly change the dimensions and configuration of the ergonomic bubble. Therefore the ergonomic bubble should be accepted as a reasonable space indicator to be considered in the design process as a major space determining factor but not the only one.

The application assignment required the design and full-scale execution of a meditation shelter [Fig.7-9] able to accommodate one person for a minimum time span of twenty-four hours and a maximum time span of forty-eight hours. The individual -the student - was expected to spend the allocated time without leaving the shelter. The site: a campus location. The design time span was two weeks with an additional week for full-scale execution. The economy of form design criterion was: minimum resources for optimum results. An additional

design criterion emphasized that the shelter, its use, construction and materials should become expandable after the expiration of the maximum allocated time. One reason for this condition was to prevent the adoption of ready-made solutions [i.e.: a tent]. The design-build aspect of this assignment fulfilled several objectives: [a] a verification of ergonomic studies in their application to achieve a comfortable living situation; [b] a verification of the designers' decisions by experiencing in real-life terms the shelter; and [c] full scale experimentation and verification of the shelter's construction: structural design, choice of materials, utilities, joints. In addition, the assignment also introduced the students to site and climate considerations and an awareness of the role of construction management.

The students were encouraged to change their partners from previous teams, diversify the dialogue and apply all ergonomic aspects recorded in the research study. The output of this assignment produced a wide range of design approaches, uncommon interpretations of the way space and utilities can be used, use of unconventional and recycled materials and an initial awareness of the importance of carefully designed joints and details. The culmination of the process was the ability to test and share the architectural experience. The most demanding aspect of the process was the adequate understanding of details, in particular construction joints. This came as no surprise and actually achieved the objective to make the students, in this early phase of their education, aware of the importance of detail design.

The majority of the teams were able to accomplish the task as scheduled. One team lagged behind, mostly due to its difficulty in the understanding of the theoretical bearings of their approach [a non-regular space structure]. All teams were intrigued by the process and invested a lot of dedication and perseverance in their attempt to develop the assignment.

This hands-on, temporary, design built assignment raises the question whether in a high-tech and info-tech civilization there is still place for such instruction. The answer is positive for the following reasons: [a] construction and verification of one's design thinking, in full scale, provides an extremely valuable experience, in terms of psychological realization and technical achievement, even if not every detail can be properly executed; and [b] the construction process becomes an additional design challenge as it reveals missing or unsuitable components which need to be designed or redesigned.

The next topic was focused on the design for skateboard activity. Lincoln has a small constituency of young skateboarders. The city just started to build several dedicated surfaces in peripheral parks but in the same time regards their activity in the city as damaging. This rather novel topic was selected mainly to enable the students to address their design process with minimal preconceptions. The first part of the assignment - the fourth assignment in the sequence - focused on the investigating the nature of skateboarding. [Fig.10-12] The allocated time for accomplishing this assignment was two weeks. Teams of two to three students investigated several aspects of the topic: a general overview; programmatic requirements; performance diagrams; ideal schemes; and the identification of adequate location for the place.

Two findings emerged from the study: one, the activity is intrinsically urban; and two, skateboarding is a mix of game, sport and a life style.

The second part of the assignment - the fifth in the sequence - focused on the design of the skateboard place. [Fig.13-24] The time allocated for this assignment was five weeks. In the initial phase of this assignment each students was asked to develop a design direction and select a site based on their personal interpretation of the theoretical study. It was left to their decision whether their individual design concept will determine the site selection or vice-versa. Two students decided to consider the assignment as an adaptive-reuse project and selected a recently vacated auto dealership building located on Lincoln's main street - O Street. One student developed an urban concept parallel to the Downtown bike-track. Two students located their design as sidewalk developments along central arteries in Downtown and integrate skateboarding in the public realm. One student found an unused but centrally located space on the border between the Downtown and the historic district. The intent to recycle 'lost spaces' guided one student to adopt an underused parking lot in the historic district and another student to select a parking lot in the heart of the business area of Downtown. Another inspiring design-determining factor were the unused spaces underneath highway ramps. Four students selected sites located in downtown parks. One student persisted to choose Time Square NY as his site as an expression of his very broad world-view.

The economy of form criterion applied to this assignment was 'optimum resources for maximum results'. This criterion offers a wide range of opportunities while preserving a certain critical limitation: optimum resources do not allow for unlimited resources. In other words, the students were encouraged to develop ideas and forms that still had to provide a reasonable justification of resources.

The diversity of design directions that evolved in the process of developing the assignment implicitly brought back the questions raised at the beginning of the semester. Issues such as the relation of architecture to the public, specific users and physical context became again subjects for debate. In the process of developing the scheme, specific aspects of the design, such as the attributes of the conceived environment [i.e., scale, climate, performance], its construction and materials, and the 'good fit' between the components of the scheme, were widely discussed.

Initially, students were encouraged to analyze and discuss their queries and ideas, in a rather uninhibited way, using a mixed-media representation mode that included writing, quick two and three-dimensional sketches and hard and electronic modeling. This approach is a tested and very helpful teaching devise, effective especially in the transition from theoretical studies to a creative, risk-taking, mode of design thinking and

expression.[6] The design development phase, that followed, attempted to provide design proposals in 1/8" and 1/4" scales and hard and electronic spatial representations.

As part of the design evaluation, three architectural features received particular attention: site development, structures and light. The diversity of proposals indicated the wealth of possible interpretations an architectural topic may accept, which illustrate the diversity of the human nature.

As mentioned earlier, the last assignment was not meant to reach an established solution, but to bring forward an intellectual exercise in understanding architectural design, a beginning phase in the students' professional education. The question of the human dimension remained open for continuing discussion. The final critique, conducted with guest critics, reopened the discussion on many of the questions addressed in the design process. The students were encouraged to consider these comments as a recognition of their ability to generate an architectural proposal and effectively communicate it, rather than as a professional confirmation or failure. Too often we tend to attribute to schemes done in school real-life significance, which, in this author's opinion, is pedagogically detrimental. Student work should be first of all appreciated for its educational value and exploratory quality. Academic studio work is a way to develop the student's understanding and ability not a vehicle to compensate for lack of sufficient design research in our profession.

The process described above was intended to be displayed in a final exhibition of all the work done throughout the semester. The students were expected to design and execute the exhibition as a collective effort. This part of the course however was canceled due to administrative limitations. The students used the remaining time to edit their output and include it in their portfolio.

Conclusion.

The learning process, described in this paper, was conceived to appear initially rather vague confronting the students with a study concept of " an undifferentiated unfocused vision" which is "inherent in any creative search" [A. Ehrenzweig, 1971] Through this approach the students were stirred to reflect on the issues without any preconceptions, to discover and invent knowledge, to ask questions and correct mistakes. In doing so they had to challenge themselves to address the design-doing and the design-making with 'naivete', and expose themselves primarily to their own decisions and critiques. By conducting and establishing a nucleus of a research agenda and findings the students were able to overcome the inhibiting syndrome of 'the empty white board' and achieved a transition from confusion into a productive design process. Initial findings enabled the students to reflect on the topics, generate personal interpretations and enter a condition of incubation and experimentation. Doodling and heuristic reasoning, debates and revisions, which initially may have seem a waste of time, ultimately enabled the students to see beyond their known horizon and enabled them to discover and invent new situations and environments, meanings and forms. This process of reflection and interpretation, mixing personal ideas and findings, continuously filtered through discussions and critics, became an inspiring environment fertile in unanticipated design thoughts.

We also have to keep in mind that no pedagogical devise can and should replace an individual's interest in design studies. Education can enhance and help develop personal abilities but it can also reveal the student's personal limitations. As such, the process applied in this beginning studio enables students to make career decisions already in this early phase of his/her academic education and define their professional priorities.

Finally, the topic of the studio - the design for the human program - has been revealed but remains of course unresolved. And maybe, in the future, through continuous inquiry our students will be able to remember and address as accomplished architects Kierkegaard concern:" It is perfectly true, as philosophers say, that life must be understood backwards. But they forget the other proposition, that it must be lived forwards." S. Kierkegaard, Collected Works, 1843.

Notes :

1 The model of the Adjunct course was reported in a previous ACSA publication [Maller1999]. The integration model between the adjunct and the studio is constantly being revised and adjusted with various degrees of success.

2 In a lateral way, students are introduced to problems related to aspects of criticism of representation. The intention is to balance the predominantly object orientation students have received in the pre-architecture studios by discussing arguments brought forward by authors such as Walter Benjamin or Massimo Cacciari. For instance, see Cacciari's essay The Oikos of Wittgenstein, [1993].

3 David Oakley [1970] offers inspiring insight into the intricacies of architectural education in a changing world. In discussing Architectural Thought he maintains that: "One cannot climb the tree of architectural knowledge. One prepares the mind so that it may grow within. First the seed has to be sown and character of the growth to be expected broadly indicated. Some facts have to be absorbed. But from the beginning of study most necessary fertilizers are ideas; and some of these must come from the student himself." [pg.15]

4 It is beyond the scope of this paper to enter a discussion on the architectural connections between phenomenology and hermeneutics. The author subscribes to the position proposed by Paul Ricoeur [1993] a position that is well encapsulated in the following quotation: "All phenomenology is an explication of evidence and an evidence of explication. An evidence which is explicated, an explication which unfolds evidence: such is the phenomenological experience. It is in this sense that phenomenology can be realised only as hermeneutics."[pg. 128]

5 The reference to 'clarity of intent' and 'good fit' in the academic context should not be confused with an acceptable or good solution. Without a full exposure to the constraints of reality and clients, academic schemes, especially beginning schemes, cannot and should not be viewed as solutions. However, a search for 'good fit' on any level of design thinking, based on clear design intent, can generate and communicate inspiring proposals. In order to make it possible for the student to strife toward achieving a 'good fit' the syllabus must provide well-defined design objectives and evaluation criteria. In this context, George Nelson's essay [1957] on "Good design:

What is it for?" reads contemporary and inspiring. In Nelson's words good design "is a manifestation of the capacity of the human spirit to transcend its limitations....But it is a statement not a gadget....It reaches its full potential when it is experienced by a person fully equipped to understand and enjoy what it has to communicate." [pg.13] In our experiment the students generated a design 'statement' submitted to the 'reading' and evaluation of their class mates, faculty and visiting architects.

6 The 'unpredictable' nature of the assignments initially prevented the majority of the students to apply their skills in CAAD. However as the design became more complex CAAD representation, especially for purposes of visual verification, intensified. Ultimately, most students adopted a multi- and mixed-media format.

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